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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,659

06/06/2005

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09/08/2008

EXAMINER

WEDDLE, ALEXANDER MARION

ART UNIT

PAPER NUMBER

1792

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/537,659	<b>Applicant(s)</b> PAUWELS ET AL.	
	<b>Examiner</b> ALEXANDER WEDDLE	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/17/2008; 08/31/2005</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6, 9, and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Agostino et al. (WO 00/14296) in view of Kobayashi et al. (US 2004/0265602).

Regarding Claims 1, 14-15, and 18, D'Agostino ('296) teach coating a substrate by plasma polymerization (p. 5, lines 31-32). The substrate -- Applicant's "product" -- can be an open cell structure (Claim 6, p. 22, lines 24-28). Plasma polymerization can be conducted in a vacuum chamber (p. 7, line 28 - p. 8, line 1; p. 10 lines 25-27). D'Agostino further teaches that a monomer vapor is used (p. 18, lines 15 – 18). The substrate may be an open-cell polyurethane, polyethylene, or polystyrene, *inter alia* (p. 5, lines 19-29). . D'Agostino teach coating the substrate with fluorocarbon coatings (p. 4, lines 27-29); the fluorocarbon coatings are hydrophobes (p. 4, line 29 – p. 5, line 1). Regarding Claims 14-15, the substrate may also be a sintered open-cell reticulated/foam-like material made out of ceramics or metal (p. 5, lines 19-21; Claims 5-6, p. 22, lines 18-28). Regarding Claim 18, the fluorocarbon coatings are hydrophobes (p. 4, line 29 – p. 5, line 1)

D'Agostino fail to teach degassing a substrate before performing the plasma polymerization process. Kobayashi ('602) teaches degassing a crosslinkable adhesive layer by pressurizing and heating and/or by vacuum heating to remove gas in the adhesive layer before polymerization occurs (par. 0180). It would have been obvious at the time of invention to a person of ordinary skill in the art of forming coatings by polymerization to modify the invention of D'Agostino ('296) by degassing the substrate

as taught by Kobayashi ('602) in order to remove gases and other contaminants from the substrate before performing plasma polymerization.

The teaching of Kobayashi ('602) that degassing may be performed by heating before forming a polymer layer would have motivated a person of ordinary skill to degas a substrate in the process of D'Agostino ('296) before performing the plasma polymerization step. Furthermore, degassing would have been obvious to a person of ordinary skill in the art at the time of invention because degassing is a well-known technique applied to a known method ready for improvement which leads to the predictable result of removing gases, water, and other contaminants from the surface of the substrate.

Regarding Claim 2, the teachings of D'Agostino as applied to Claim 1 are applied to Claim 2. Further, D'Agostino fails to teach degassing by drying. Kobayashi teaches degassing by drying in an autoclave, i.e. an oven (par. 0180). It would have been obvious to a person of ordinary skill in the art to make a simple substitution of a drying kiln for an autoclave as taught by Kobayashi ('602) to obtain predictable results.

Regarding Claim 3, the teachings of D'Agostino as applied to Claim 1 are applied to Claim 3. Further, D'Agostino fails to teach degassing within the plasma polymerization device. D'Agostino does teach that the plasma polymerization is equipped with a vacuum chamber. It would have been obvious to a person of ordinary skill in the art at the time of invention to degas the substrate within the plasma polymerization device, because such person would have recognized a) that degassing within the polymerization device would be a cost-saving simplification by conserving

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space which a separate device would occupy and by saving time by removing the need to carry out steps in separate devices and b) that because the polymerization device comprises a vacuum chamber, the polymerization device is suitable for degassing with predictable results.

Regarding Claim 4, the teachings of D'Agostino as applied to Claim 2 are applied to Claim 4. Further, D'Agostino fails to teach degassing within a particular temperature range. The temperature is a result effective parameter, which affects degassing, because the temperature must be high enough to vaporize undesired contaminants and volatiles and not so high as to degrade the open-cell structure; the selection of a temperature range between 20 °C and 200 °C to optimize the process would have been within the skill of a person of ordinary skill in the art at the time of invention to adequately degas the open-cell structure.

Regarding Claims 16-17, the teachings of D'Agostino as applied to Claim 1 are applied to Claim 16-17. Further D'Agostino fail to teach a semi-open celled foam. It would have been obvious to a person of ordinary skill in the art to substitute an open cell foam as taught by D'Agostino with a semi-open celled foam to practice the method of D'Agostino with predictable results, because D'Agostino ('296) teaches a substrate which is an open cell foam, which encompasses semi-open celled foams, and a person of ordinary skill in the art at the time of invention would have recognized the benefit that a semi-open celled foam offers in combining the good sealing properties of a closed cell with the flexibility of an open cell foam.

Thus Claims 1-6, 9, 12-18 are *prima facie* obvious absent evidence to the contrary.

5. Claims 7-8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Agostino et al. (WO 00/14296) in view of Kobayashi et al. (US 2004/0265602) as applied to claims 1 and 6 above, and further in view of Vanlandeghem et al. (WO 01/89721 A1).

The teachings of D'Agostino et al. (WO 00/14296) in view of Kobayashi et al. (US 2004/0265602) and their applicability to the claims are discussed in section 4, which is incorporated herein.

D'Agostino et al. (WO 00/14296) in view of Kobayashi et al. (US 2004/0265602) further fails to teach that the monomer vapor consists of a monomer or a mixture of monomers containing halogen and/or phosphor and/ or nitrogen and /or silicon; that the monomer results from precursor gas(es) or liquid(s) selected from fluor containing compounds, phosphor containing compounds, silicon containing compounds and nitrogen containing compounds; that the monomer results from a precursor selected a trimethylphosphate, triethylphosphate, tripropylphosphate or other derivatives of phosphoric acid; and that the monomer results from a precursor selected from ethylamine, triethylamine, allylamine or acrylonitrile.

Vanlandeghem et al. ('721) teaches that plasma polymer coatings provide protective properties to the surface of plastic materials (p. 3, lines 1-3). Vanlandeghem discloses that these coatings lend fire or flame retardant properties to the surface of plastic materials (lines 4-12). Vanlandeghem teaches that a plasma polymer coating

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results from plasma coating using a monomer or mixture of monomers containing halogen and/or phosphor and/ or nitrogen and /or silicon (p. 3, lines 12-16); that the monomer results from precursor gas(es) or liquid(s) selected from fluor containing compounds, phosphor containing compounds, silicon containing compounds and nitrogen containing compounds (p.3, lines 12-20); that the monomer results from a precursor selected a trimethylphosphate, triethylphosphate, tripropylphosphate or other derivatives of phosphoric acid (p.3, lines 27-29); and that the monomer results from a precursor selected from ethylamine, triethylamine, allylamine or acrylonitrile (p. 4, lines 6-8).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of D'Agostino et al. ('296) in view of Kobayashi et al. ('602) by using the monomer vapor as taught by Vanlandeghem et al. ('721), because Vanlandeghem et al. ('721) suggests using plasma polymerization to form a protective coating from monomer vapor and D'Agostino in view of Kobayashi et al. provides a method for using plasma polymerization to form a protective coating from monomer vapor.

Thus Claims 7-8 and 10-11 are *prima facie* obvious absent evidence to the contrary.

### **Conclusion**

6. No Claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER WEDDLE whose telephone number is



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(571) 270-5346. The examiner can normally be reached on Monday-Thursday, 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. W./  
Examiner, Art Unit 1792

/Michael Kornakov/

Supervisory Patent Examiner, Art Unit 1792